A third area of excessive precipitation was centered over the upper Rio Hondo. This rainfall resulted in the Rio Hondo overflowing its banks and flooding the city of Roswell on May 28–29. The losses suffered in Roswell are estimated at $13,500.

The excessive rainfall over the upper Pecos watershed gave rise to a serious situation along the Pecos River. The following report by the official in charge at Albuquerque, N. Mex., in regard to the floods in the Pecos River and in the Rio Grande is presented herewith:

Exceptionally heavy and general rains over eastern New Mexico caused much flood damage during May and June.

The most serious conditions were in the Pecos River watershed where record-breaking stages occurred. Extreme excessive rainfall occurred over a rather small area between Rowe and Anton Chico. This rainfall along with general rains over the entire watershed caused a peak stage at Santa Rosa of 29.0 feet, which is believed to be an all-time record.

The most serious problem was the unfinished Alamogordo Dam above Fort Sumner. The dam was nearly full of water from the May 28th rains and every effort possible was required to keep the dirt fill ahead of the water. This office received word of the excessive storm near Rowe from an airplane pilot and issued the warning to the officials at the Dam. Over 8 hours time was saved by issuing the warning when information was received from the pilot, instead of waiting until the water reached the gage at Santa Rosa.

Arrangements were made to warn the people in the Pecos Valley below Fort Sumner in case it was necessary to do so. Radio equipment was obtained and placed in planes ready to be sent to Fort Sumner in case telegraph and telephone lines failed. The Coast Guard was contacted at El Paso and they furnished much help by flying up and down the river and reporting flood conditions. They also stood by for possible help in case it would be necessary to issue flood warnings to the people below Fort Sumner.

Due to exceptionally heavy snowfall in the upper watershed of the Rio Grande the river was near flood stage at Espanola and Albuquerque, N. Mex., from May 1 to 31. No damage occurred at Espanola or Albuquerque, but some damage was reported at Bernalillo, about 20 miles north of Albuquerque, and much damage between Albuquerque and Elephant Butte Dam. The greatest damage occurred between Los Lunas and San Marcial. Much farming land in that section is lower than the normal river bed and is protected by dikes. The main flow of the river shifted, and this along with the continued high water caused many of the dikes to break on May 18, flooding rich farm lands and roads, and washing out tracks, etc.

On May 28 several severe thunderstorms occurred north and west of Socorro, about 3 p. m., causing a severe flood in the Rio Puerco and Rio Salado. Much damage occurred between Socorro and San Marcial, as the added water coming into the Rio Grande caused more dikes to break and added much water to already flooded areas. Much property and probably some lives were saved by advance warnings from this office, based on reports from two pilots that were in the vicinity of the severe rains when they occurred and reported direct by radio to this office. Some 2 hours' advance notice was given, which would have been impossible if the pilots had not reported, as there are no telephones or telegraph stations in that section. Four people in an automobile were trapped in an arroyo and were drowned.

The general rains during the first few days in June caused added trouble in the Rio Grande below Albuquerque, from the 1st to the 6th. Irrigation projects were flooded. The town of Belen was under water, and the low land between Socorro and San Marcial was again flooded. Road and railroad bridges were washed out below Socorro, blocking traffic between El Paso and Albuquerque.

Exceptionally heavy losses resulted from the overflows in the Pecos and Rio Grande in New Mexico during May and June, the greatest item being the damage to growing crops. The total estimated losses are as follows: Pecos River, $987,600; and Rio Grande, $787,500. The warnings are believed to have resulted in preventing a much greater loss.

Minor flooding occurred in the Guadalupe River in Texas from June 5–9, but no damage of consequence resulted.

Colorado Basin.—No floods occurred in the Colorado Basin except that an irrigation reservoir dam on the Gunnison River just above Austin, Colo., burst on June 13, resulting in severe local damage to the town of Austin and to approximately 3,000 acres of land. The estimated losses amounted to about $211,000.

Pacific Slope drainage.—The overflow in the San Joaquin Basin continued during the first part of June with stages in the Kings River exceeding flood stage at Piedra, Calif., from June 4–7. That portion of the water which could not be diverted for irrigation purposes continued to flow into Tulare Lake Basin until cooler weather during the latter half of the month brought about a more gradual run-off.

Although the precipitation was considerably above normal over the Columbia Basin during June flood stage was exceeded at only two points, Jefferson, Oreg., on the Santiam River and Vancouver, Wash., on the Columbia River. No damage resulted.

Corrections to April Report

Page 164, Table of flood stages.

Oneonta, N. Y., dates above flood stage and crest published as "From April 6, to April 7, crest 13.0 on April 6, 7" should be as follows (all dates in April):

Above flood stage—dates		Crest	
From—	To—	Stage	Date
6	9	14.0	6, 7
16	18	12.9	16
23	24	12.4	23

Table of flood stages during June 1937

[All dates in June unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Lake Michigan					
Red Cedar:	*Feet*			*Feet*	
Williamston, Mich.	7	25	27	7.1	26
East Lansing, Mich.	8	26	26	8.1	26
Grand:					
Eaton Rapids, Mich.	5	25	30	7.1	27
Lansing, Mich.	11	26	27	11.7	27
Lake Erie					
St. Joseph:					
Montpelier, Ohio	10	21	29	(1)	22
Fort Wayne, Ind.	12	25	27	13.2	26
Sandusky: Tiffin, Ohio	7	22	24	9.4	22
		25	27	9.6	26
ATLANTIC SLOPE DRAINAGE					
Santee:					
Rimini, S. C.	12	3	6	12.3	4
		22	27	12.5	25
Ferguson, S. C.	12	26	27	12.0	26, 27
Savannah: Ellenton, S. C.	14	22	22	14.2	22
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Rock: Moline, Ill.	10	22	29	11.2	25
Bourbeuse: Union, Mo.	12	10	12	15.4	12
Meramec: Valley Park, Mo.	14	10	12	15.0	10
Missouri Basin					
Solomon: Beloit, Kans.	18	4	7	20.9	6
		16	16	18.0	16
Osage: St. Thomas, Mo.	23	10	14	27.2	12
Missouri: Nebraska City, Nebr.	15	21	[2] 29	16.5	25, 26
Ohio Basin					
Tuscarawas: Coshocton, Ohio	11	22	25	14.2	23
Muskingum:					
Lock No. 10, Zanesville, Ohio	25	22	23	27.6	22
Lock No. 7, McConnelsville, Ohio	22	22	24	26.6	22
Lock No. 3, Lowell, Ohio	25	22	23	25.2	23

[1] "Over gage"; gage graduated to 14 feet.
[2] Fell 0.3 foot below flood stage on 28th.

Table of flood stages during June 1937—Continued

River and station	Flood stage	Above flood stages—dates From—	To—	Crest Stage	Date
Ohio Basin—Continued					
Little Kanawha: Glenville, W. Va.	Feet 23	21	22	Feet 27.8	22
Scioto: LaRue, Ohio	11	21	23	13.9	
Prospect, Ohio	10	22	25	11.5	22
Circleville, Ohio	14	22	25	19.3	23
		27	27	14.8	23
Chillocothe, Ohio	16	24	25	17.2	27
West Fork of White: Anderson, Ind.	8	4	6	8.3	24
		9	21	9.8	5
White Basin					15
Black: Black Rock, Ark.	14	11	12	14.6	11
Arkansas Basin					
Cimarron: Perkins, Okla.	11	16	16	12.1	16
Neosho: Oswego, Kans.	17	10	11	20.5	10
		15	17	22.6	16
North Canadian:					
		4	4	5.8	4
Woodward, Okla.	5	9	11	6.8	11
		13	13	5.4	13
		15	16	7.0	16
		4	4	6.0	4
Canton, Okla.	6	10	12	7.5	11
		15	18	8.2	17
		May 31	9	10.0	6
Yukon, Okla.	8	10	26	11.7	19
(East) Oklahoma City, Okla.	14	16	16	15.0	16

Table of flood stages during June 1937—Continued

River and station	Flood stage	Above flood stages—dates From—	To—	Crest Stage	Date
Arkansas Basin—Continued					
Canadian:	Feet			Feet	
Canadian, Tex.	5	3	5	8.0	3
		3	4	7.8	4
Union City, Okla.	7	6	6	7.3	6
		9	10	9.2	10
Calvin, Okla.	15	1	1	15.0	1
Lower Mississippi Basin					
Big Lake Outlet: Manila, Ark.	10	12	26	12.6	17, 18
WEST GULF OF MEXICO DRAINAGE					
Guadalupe: Gonzales, Tex.	20	5	7	28.2	6
Victoria, Tex.	21	8	9	22.3	9
Pecos: Santa Rosa, N. Mex.	10	2	3	29.0	2
Rio Grande: Espanola, N. Mex.	7	[3]	6	[4]	
Albuquerque, N. Mex.	4	26	27	5.1	26
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Santiam: Jefferson, Oreg.	10	21	21	10.1	21
Columbia: Vancouver, Wash.	15	21	28	16.8	24

[3] Continued from previous month. [4] Crest occurred during previous month.

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

(The Marine Division, I. R. TANNEHILL in charge)

NORTH ATLANTIC OCEAN, JUNE 1937

By H. C. HUNTER

Atmospheric pressure.—Over waters in the vicinity of western Europe and the British Isles pressure averaged above normal, Valencia, Ireland, showing a departure of +0.1 inch. The station at Belle Isle, Newfoundland, averaged 0.09 inch above normal, while the Gulf of Mexico had approximately normal pressure.

Most of the North Atlantic, however, averaged moderately below normal in pressure. The portions of the month notable for particularly low pressure were different as to area. The Greenland-Iceland area had low readings for the most part during the first fortnight and again during the final week; the Azores area from the 10th to 26th inclusive; and the Bermuda area, to an extent rather marked for the latitude and the season, from the 22d to the end of the month.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, June 1937*

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Julianehaab, Greenland	29.77	−0.09	30.26	17	29.26	2
Reykjavik, Iceland	29.83	−.05	30.42	16	29.18	26
Lerwick, Shetland Isles	29.88	+.09	30.27	12	29.29	28
Valencia, Ireland	30.10	+.10	30.48	15	29.62	6
Lisbon, Portugal	30.12	+.09	30.30	27	29.83	10
Madeira	30.11	+.04	30.30	26	29.97	10
Horta, Azores	30.15	−.09	30.48	8	29.78	11
Belle Isle, Newfoundland	29.95	+.09	30.36	18	29.56	13
Halifax, Nova Scotia	29.94	−.03	30.40	17	29.50	22
Nantucket	29.90	−.08	30.34	17	29.44	22
Hatteras	29.96	−.05	30.21	17	29.59	28
Bermuda	30.08	−.05	30.26	17, 18	29.78	29
Turks Island	30.02	−.01	30.07	5	29.91	25
Key West	29.99	.00	30.14	11	29.80	29
New Orleans	29.98	.00	30.20	11	29.71	29

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

The extremes of pressure thus far reported are 30.64 and 29.03 inches. The higher mark was recorded on the American steamship *City of Havre*, late on the 17th, near latitude 48° N., longitude 26° W. The lower mark was noted on the Norwegian steamship *Sangstad*, at 8 a. m. of the 25th in about 67° N. 3° W., or approximately 350 miles to eastward of the northeastern limits of Iceland, from which locality very few vessel weather reports are received, even in Summer.

Cyclones and gales.—Scanning the series of monthly tables of ocean gales and storms, which this publication has presented since the latter part of 1924, brings to notice no other month with as few North Atlantic gales (force 8 or more) as June 1937. Three vessels encountered strong gales (force 9) and another a fresh gale (force 8), making four gales in all.

On the 4th and 5th two vessels reported strong gales about 700 miles west of Scotland. Both vessels were west-bound and their pressure readings were comparatively low for June.

During the night of the 14–15th two vessels noted respectively force 9 and force 8 when they were not far to eastward of the coast of New Jersey.

The table includes three instances of force 6 winds that were experienced in the south-central portion of the Caribbean Sea.

Fog.—June is expected to be a foggy month for much of the North Atlantic and during this June there was more fog than the average amount from the coasts of the North Atlantic States and the Maritime Provinces eastward to the Grand Banks and a short distance beyond; also a considerable number of reports of fog have come from squares north of 50° and near or somewhat to eastward of midocean. An area northwest of the Azores and another immediately to westward of Ireland and France reported less fog than is expected, but an area just northeast of the Azores reported more than the normal occurrence. In general fog occurred widely over the eastern North Atlantic about the 12th to 15th and during the final 4 days of the month.